

Work Order ID 62713

Page 1

Wednesday, October 06, 2010 3:40:02 PM

Item ID: D6101-007

Accept



Setup Start



Revision ID:

Item Name: Saddle Billet

Stop



Start Date: 10/6/2010 Start Qty: 40.00



Cust Item ID:

Required Date: 10/15/2010 Req'd Qty: 40.00



Customer:

Reference:

Approvals: Process Plan:

Date: 10/06

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr	Revision Nbr
D6101	Rev B

100



PURCHASING

Purchasing

Memo

Issue P/O: 12715

0.00

CL 10/10/08 (70)

a) Description: Alluminum billet
 b) 7.750" x 8.250" x 2.50" thick
 c) Tolerance on all dimensions are +0.030"/-0.000"
 d) Grain direction along 7.750" length
 e) Material: 7075-T7351 (QQ-A-250/12)
 f) Material certification required

110



Receive & Inspect for Damage & Mat'l Certs

0.00

P10/10/22 (40)

Packaging

Memo

Ensure material certification is attached

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 62713

Page 2

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Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberReject
NumberInsp.
Stamp

120



QC

Quality Control

QC6- Inspect dimensions to drawing

0.00

JL 10/10/25

130



Packaging

Packaging

Identify as per dwg & Stock Location: MAT42

0.00

JL 10/10/25

140



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

MF

10-10-25

QC

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

Picklist Print

Wednesday, October 06, 2010 3:40:06 PM

Page 1
1

Work Order ID: 62713



Parent Item: D6101-007



Parent Item Name: Saddle Billet

Start Date: 10/6/2010

Required Date: 10/15/2010

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP A: 01.05.04 New Issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007P		Purchased		No		110	Each	0.0000	1	40		2010/10/06 (y)	

7075-T7351 8.25X7.75X2.5

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

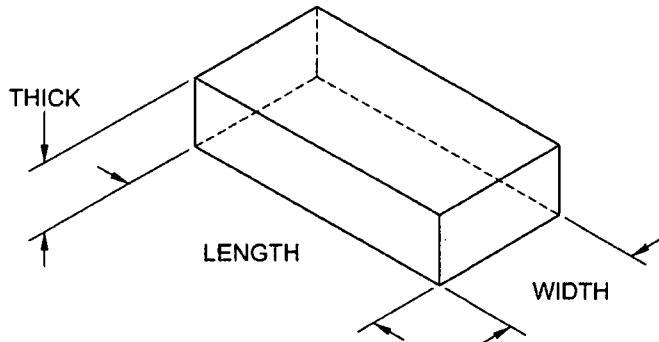
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SPECIFICATION CONTROL DRAWING



UNCC

NO. 02713
010-0-00

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.



ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length



RELEASED
09/07/15/WP

B	ADDED D6101-015/-017, ADD ASTM B209			RF	09.04.23
A	NEW ISSUE			CP	01.03.30
REV.	DESCRIPTION			BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWN	RF				
CHECKED	<i>PS</i>	DRAWING NO.		REV. B	
MFG. APPR.	<i>PS</i>	D6101		SHEET 1 OF 1	
APPROVED	<i>PS</i>	TITLE		SCALE	
DE APPR.	<i>PS</i>	SADDLE BILLET, 7075		NTS	
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO12715**

Purchase Order Date 10/08/10
PO Print Date 10/08/10

Page Number 1 of 1

Order From : VC-MET001

METAUX CASTLE
A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100
TORONTO, ON M4Y 3A5
CA

Contact Name	Buyer	Chantal Lavoie
Vendor Phone	Requisition Nbr	
Vendor Fax	Tax Resale Nbr	10127-2607
Vendor Account Nbr	Terms	Net 30
	Currency	CAD
	FOB	Destination-Collect

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
10/08/10

Line Nbr	Reference Revision ID	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6101-007P	7075-T7351 8.25X7.75X2.5	10/26/10 Yes	40.00 Each		\$79.2800	\$3,171.20

Special Inst: AS PER DWG D6101 REV. B
B62713
ALUMINUM BILLET
SIZE: 7.750" X 8.250" X 2.50" THICK
TOLERANCE ON ALL DIMENSION ARE
+0.030"/-0.000"
GRAIN DIRECTION ALONG 7.750"
LENGTH
MATERIAL: 7075-T7351 (QQ-A-250/12)
OR
QQ-A-250/12 OR ASTM B209

**MATERIAL CERTIFICATION
REQ'D UPON DELIVERY**

PO Total: **\$3,171.20**

W.C.L.
No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

Change Nbr: 1

Change Date: 10/08/10



Castle Metals®

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:538708

Expédié de / Ship From:	Vendu à / Sold To:		Expédié à / Ship To:	Livré à / Deliver To:
Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2	WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms	Transporteur / Carrier	Nº du Bon de connaissance / BOL No
21-OCT-10	ORIGIN	Prepaid	MANITOULIN	538708-2

Détails d'expédition / Shipment Details		Destination finale / Final Destination Branch - MON	

Nº de commande / Order No	Nº de ligne Line No	Nº d'article / Item No	Description
1044403	1	6879.MO	2.5000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 8.25 IN (+ .0620/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN (+ .0620/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12

Nº de bon de commande / Purchase Order No	Nbre de pièces / Part Number	Qté commandée / Ordered Qty	Qté Facturée / Invoice Qty
12715	YOUR ITEM NUMBER: D6101-007	40 PCS	40 PCS

Nº de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce)/ Width (IN)	Longueur (Pouce)/ Length (IN)	Qté expédiée/ Shipped Qty (LBS)
50531306		485579A7		40			661.27

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des Etats-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.
These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.
Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned

SHIP TO:
 CASTLE % CASTLE AEROSPACE
 3050 SOUTH HYDRAULIC
 WICHITA, KS 67216

SOLD TO:
 CAS AERO%AM CASTLE METALS
 ATTN: BOB OHR %ACCTS PAYABLES
 3400 NORTH WOLF ROAD
 FRANKLIN PARK, IL 60131

KAISER
ALUMINUM

Trentwood Works - Spokane, WA 99215
 Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
 4172660

CUSTOMER PO NUMBER:		WORK PACKAGE:		CUSTOMER PART NUMBER:		SHIP RUN/LOAD ID:	GOV'T CONTRACT NUMBER:
15132				6879 AMC A97075-60		101636/8	
KAISER ORDER NO:	LINE ITEM:	SHIP DATE:	ALLOY:	CLAD:	TEMPER:	PRODUCT DESCRIPTION:	
1087324	1	29-SEP-2009	7075	BARE	T7351	Sawed Plate	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	GAUGE:	DIAMETER/WIDTH:		LENGTH:	
41304 LB	23 PCS EST.	2024219	2.5000 IN	48.500 IN		144.500 IN	

Certified Specifications

AMS 4078/RevG
 ASTM B 209/Rev7
 BSS 7055/RevA
 DPS 4.713/RevAH
 GSS16100/RevG/Amd1

AMS-QQ-A-250/12
 ASTM B 594/Rev06
 CMMR 025/RevS
 EAC MS1011/RevE
 MMS 159/RevN

AMS-STD-2154
 BAC 5439/RevH
 CSTI 006/RevC
 GAMPS 9101/RevB
 PS 21211/RevK

Test Code: 4297

Test Results

Lot: 479608A2 Cast 268

Drop 23

Ingot 1

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.5 : 71.8 (493 : 495)	59.8 : 60.1 (412 : 414)	11.3 : 11.6

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.9 Min	41.5 Max
(MS/M) :	23.7 Min	24.1 Max

(ASTM E1251)

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.20	1.5	0.03	2.5	0.19	5.7	0.04	0.01	0.02	TOT 0.05

TEST REPORTS AND
 DATA CONFIRMED





Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4172660

Lot: 485572A2 Cast 271 Drop 26 Ingot 1

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.8 : 72.4 (488 : 499)	58.4 : 60.2 (403 : 415)	10.9 : 11.2

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.6 Min	40.9 Max
(MS/M) :	23.5 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.22	1.5	0.04	2.5	0.20	5.7	0.03	0.01	0.02	TOT 0.05

Lot: 485579A7 Cast 271 Drop 27 Ingot 1

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.0 : 72.3 (490 : 499)	58.9 : 60.1 (406 : 414)	10.7 : 11.1

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	39.7 Min	40.6 Max
(MS/M) :	23.0 Min	23.5 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.20	1.5	0.08	2.6	0.19	5.6	0.02	0.01	0.01	TOT 0.05



Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4172660

Lot: 485715A7 Cast 271 Drop 21 Ingot 4

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.4 : 72.4 (492 : 499)	59.2 : 60.9 (408 : 420)	11.2 : 11.4

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.9 Min	41.2 Max
(MS/M) :	23.7 Min	23.9 Max

(ASTM E1251)

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.21	1.5	0.04	2.5	0.19	5.5	0.04	0.01	0.01	TOT 0.05

Lot: 485730A6 Cast 271 Drop 29 Ingot 3

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.6 : 74.0 (494 : 510)	59.9 : 63.3 (413 : 436)	11.3 : 11.3

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	39.3 Min	42.1 Max
(MS/M) :	22.8 Min	24.4 Max

(ASTM E1251)

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.18	1.4	0.04	2.4	0.20	5.7	0.03	0.01	0.01	TOT 0.05

ALLOY LIMITS

Chemistry:	Si	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder



Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4172660

TEST NOTES

7075-T7351 plate 3.501-4.000" thick, if
ultrasonically inspected, meets requirements of CMMPO25 per
SDR CMMPO25-KaiserT-3. 7075-T7351 plate 4.001-5.000" thick,
if ultrasonically inspected, meets requirements of CMMPO25
per
SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR